Tequila Workshop 2002
“E-commerce Frameworks for Trading IP Services”

Roberto Fiutem
Research & Technologies Area
Sodalia S.p.A & IST Cadenus
Outline

◆ Business and technology drivers
◆ E-commerce frameworks overview
  • Web Services & UDDI, ebXML, RosettaNet
◆ E-commerce in CADENUS
◆ An example of B2B integration
Business and technology drivers

- Competitive markets are emerging
  - service unbundling
  - service componentization
- New trading models, roles and value-chains
- Falling cost of B2B and OSS technologies

- Traditional separation between business management and OSS is obsolete
- B2B supply-chain integration replaces OSS interconnection
Need of Automated Trading of IP QoS Services

◆ Next generation services (NGS) require QoS guarantees

Next-generation “All-IP” networks have to support SLA

◆ Delivery of NGS depend on network control mechanisms AND management capabilities working together across networks managed by different operators

Wholesale challenge:

• to offer managed IP QoS services backed up by SLA
• SLSs as technical annex to SLA for trading IP QoS services
Overall Vision

“Enhance today’s ability of delivering value-added services to end-users, where the value chain is comprised of multiple actors”

• extend ability for a provider of services to reach a wide user base
• give ability to customer facing organization to guarantee SLA on services it sells
E-commerce Frameworks Overview

- Previous generation of e-commerce solutions for OSS interconnection based on EDI
  - affordable for large companies
  - dominant enterprises often imposed proprietary integration approaches

- Next generation of e-commerce technology based on XML and Internet technologies
  - focus on business collaborations patterns as key enabler for B2B automation
Web Services

Definition: “a Web Service is an interface that describes a collection of operations that are network accessible through standardized XML messaging”

Web Services allow collaboration to occur between businesses of all sizes, significantly reducing the development and maintenance costs of building business webs.
Web Services Model

Source: IBM Web Services Toolkit documentation
ebXML

- Global electronic business standard sponsored by UN/CEFACT and OASIS
  - hundreds of participants from all over the world
- Complementary to existing B2B initiatives:
  - aims at reconciling under a std framework the existing approaches to B2B automation
- First set of specifications released in May 2001
ebXML Usage Example

Source: ebXML
ebXML Architecture

- Business Process
- Business Documents
- Core/Industry Components
- Registries/Repositories
- Register & Discover
- Collaboration Protocol Profile
- Collaboration Protocol Profile
- Business Service Interface
- Business Service Interface
- Transport
- Package
- Business Services/App’s
- Business Services/App’s

Source: ebXML
RosettaNet Overview

- Independent industry consortium
  - formed in 1998 by leading IT industry actors
  - focus on supply-chain optimisation
- Developed standards and guidelines for B2B integration via the Internet
- Public vs private processes
- Main results:
  - Business and technical dictionaries
  - RosettaNet implementation framework (RNIF)
  - Partner Interface Processes (PIPs)
RosettaNet Std Collaboration Patterns

Partner Interface Processes™ (PIPs™)

Source: RosettaNet
XML Standards Snapshot: Open XML Initiatives

Source: “XML Standards Components and Convergence” - RosettaNet
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XML Standards Snapshot: Open XML Initiatives (cont)

**Universal Specification**
- Schema & Architecture

**Supply Chain**
- Business Processes
  - Dictionary
  - Technical Content

**Universal Business Processes**

**Universal Technical Dictionary**
- Structure

**Universal Business Dictionary**
- Structure & Content

**Universal Registry & Repository**
- Structure

**Universal Messaging Service**

Development
- Early Production
- Pilot Testing
- Mass Production

- Choreography Only
- TPA Policy Only
- Requires SOAP

- Small Subset
- Method for Managing Multiple Messages
- Security Only
- Security Only
- Method for Managing Multiple Messages

Source: “XML Standards Components and Convergence” - RosettaNet
XML Standards Snapshot: Open Electronic Component XML Initiatives

Source: “XML Standards Components and Convergence” - RosettaNet
XML Standards Snapshot: Proprietary XML Initiatives

- **Development**
- **Early Production**
- **Pilot Testing**
- **Mass Production**

**Universal Specification**
- Schema & Architecture

**Supply Chain**
- Business Processes
- Technical Content
- Dictionary

**Universal Business Processes**

**Universal Business Dictionary**
- Structure & Content

**Universal Technical Dictionary**
- Structure

**Universal Registry & Repository**
- Structure

**Universal Messaging Service**

- **BizTalk Framework** (Microsoft)
  - Plan to adopt ebXML
  - Built on SOAP
  - Primarily Content
  - Not the same as BizTalk Server which is a commercial software product.

- **XCB (CommerceOne)**
  - Content Only
  - Plan to Adopt ebXML

- **cXML (Ariba)**
  - Plan to Become Agnostic

Source: “XML Standards Components and Convergence” - RosettaNet

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B2B Integration scenario:
Automating Collaboration between Retailer - Wholesaler

◆ Steps:
  • partners agree on business process
  • partners implement their corresponding role in the business process

◆ B2B integration infrastructure:
  • process integration technology and process modeling tools
  • secure messaging infrastructure
  • XML transformation technology

◆ Discovery services:
  • to locate sellers of services and browse alternatives
Achieving Reuse through Common Business Processes

- Potential for reuse of Business Process specification is an expected benefit of ebXML framework
- Reuse at process modeling stage:
  - business process, transaction level
  - business document level
- Horizontal vs Vertical Processes
- Approaches to Business Process definition
  - adoption of “Off-the-Shelf” processes
  - realisation of customised processes via composition of standard process patterns
E-Commerce in CADENUS: The Mediation Component Framework
Mediation Component Framework: Service Negotiation

Business Processes:
- Service catalogues, pricing info
- RFQ, AvailabilityChecks, Order

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Mediation Component Framework: e-Commerce Technologies

E-Commerce Frameworks/Tools:
- ebXML, UDDI, RosettaNet
- BindPartner, BEA, ...

Document libraries:
- xCBL, cXML, UBL, ...

Other technologies:
- XSLT, SOAP, ...

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An example of B2B integration

◆ EURESCOM P1106 project:
  • “e-commerce impacts on service & network operations & management”
  • Operators: Telecom Italia, British Telecom, Telenor, …
  • Vendors: Acterna, BEA, Spirent, Sodalia

◆ Demonstration at NOMS 2002:
  • Provide an example of B2B integration in the telco domain:
    ‣ design of an ebXML Business process for trading IP QoS Services in a multi-domain, inter-operator context
    ‣ integration of Sodalia NetFulfill provisioning platform and BEA WebLogic Integration platform
  • Partially based on Cadenus Service Mediator developments and Cadenus IP QoS Trading business process specification
Business Scenario (Supply chain)
ebXML Business Process Implementation Components

Customer / End User

Sodalia E2E Service Provisioning tool

BEA B2B Gateway

ebXML Messaging

Network Provider 1

BEA B2B Gateway

Sodalia Provisioning & Activation tool

Network Provider N

BEA B2B Gateway

Sodalia Provisioning & Activation tool

Service Provider

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Demo Scenario

• Actors
  – A Service Provider acting as Service Integrator
  – Two National Network Providers
  – Two European Backbone Providers

• The Service Integrator buys IP QoS Connectivity services from NPs and delivers e2e connectivity to its customers

• The Service provider has B2B agreements with NPs
Trading IP QoS Services

Business Process

- trading of IP QoS Connectivity Services based on P1008 negotiation model
- using SLS as technical annex to SLA
- based on the ebXML Business Process Specification Schema
ebXML Process Model
Buying IP QoS Connectivity in a Multi-Domain, Multi-Operator Context

- Service Provider may buy IP QoS connectivity for:
  - fulfilling an end-user request
  - as part of a capacity planning process
Building E2E Connectivity

Sodalia Multi-Domain Connectivity Designer: A DSS for:
- analyzing NPs services
- identifying suitable offerings, given QoS reqs
- ranking in accordance to desired criteria

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Conclusions

◆ Delivering end-user services with adequate service level guarantees requires coordination between providers in the value-chain

◆ Coordination needs to occur at:
  • business process level
  • network configuration level

◆ Providers trading telco services may benefit from B2B integration technology:
  • to advertise their offerings, locate potential partners and compare alternatives
  • to deal with diversities in IT infrastructure and processes of partners
  • to support the negotiation of service levels with network resource providers and the exchange of SLA report information